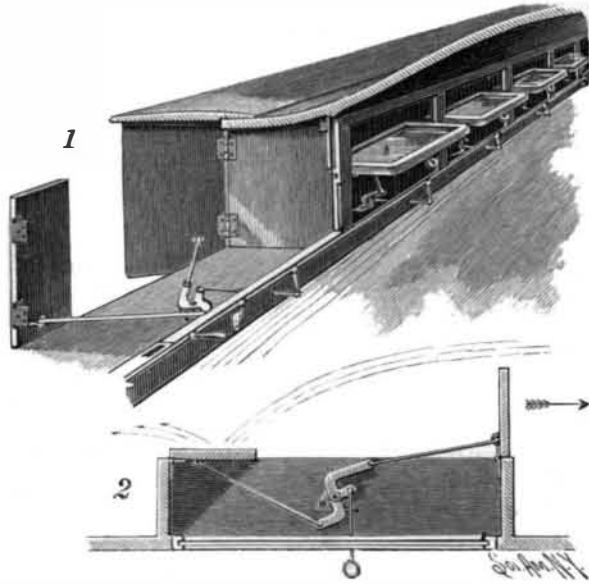


**A NOVEL CAR AWNING VENTILATOR.**

To insure the improved ventilation of a railway passenger car, and prevent the entry of cinders and dust, as well as to prevent draught blowing through the ventilators down upon the passengers, the improvement shown in the accompanying illustration has been devised and patented by Charles A. Bennett, of No. 32 West Hamilton Place, Jersey City, N. J. Fig. 1 represents the application of the improvement on a portion of one side of a car roof, there being two deflecting wings hinged on the ends of the window casings, and these wings being pivotally connected by links on their inner faces with the arms of a lever fulcrumed on

**BENNETT'S CAR AWNING VENTILATOR.**

a plate set in the window casing. An arm of this lever is engaged by a handle sliding in the sill, and the outer end of the handle may be moved by means of a rod extending along under the windows, whereby all of the wings on one side of a car may be turned simultaneously, the three-armed levers thus actuated causing the wings on one side of each window to swing outward, while its opposite wing swings inward, longitudinally of the car, closing part of the window casing. Thus, as will be seen by Fig. 2, when the car is moving as indicated by the arrow, the wing that is swung outward deflects the strong air currents over upon the opposite closed wing, and prevents cinders, dust, and an objectionable draught from passing in at the window.

**TO RING A BELL WITHOUT SWINGING IT.**

The illustration represents an improvement whereby bells on churches, schools, etc., may be rung without causing special strain of the tower, belfry, or any part of the structure by which the bell is supported. The improvement has been patented by Rev. John H. Strain, of Gentryville, Ind. The bell is rigidly secured at its top in the usual belfry or tower, so that the bell will remain stationary instead of swinging when rung. On the under side of the clapper is an eye connected with the ends of oppositely extending chains which are connected at their other ends with the ends of a curved

**STRAIN'S BELL RINGING MECHANISM.**

arm attached at its middle to a shaft journaled in bearings immediately below. One end of the curved arm is weighted, to hold it when at rest in the position shown in the illustration, and the other end of the arm is connected with a downwardly extending rope, by pulling upon and releasing which the clapper strikes and sounds the bell alternately on opposite sides. As will be seen, a proper and full sounding of the bell is insured by this mechanism, which imparts a swinging motion to the clapper, and the building is not injured by jarring, as so frequently happens with heavy bells.

A HOTEL at Nice, France, advertises a special race track for the exclusive use of its cycling patrons.

**Correspondence.****A Simple Method of Regulating the Vacuum in X Ray Tubes.**

To the Editor of the SCIENTIFIC AMERICAN:

A little point which I have found out about focusing Crookes tubes may be of interest, as I have not seen it in print. In use, the vacuum of the tube runs up, necessitating increasing the power of the coil to get the same results, and after this increase becomes impracticable, heating the tube is resorted to. This is apt to destroy the tube by cracking it, unless very carefully done, and, even if safely done, it soon loses its power to restore the tube. It occurred to me that the increase of vacuum was due to the absorption of gases by the platinum anode, and, knowing that the negative pole threw off gas, reversed the polarity of the tube. After working it in this way for half an hour, the tube was restored to full power, and I have practiced this process for the past two months with perfect success and without injury to the tube. After an hour's run with the X rays I reverse it as above, and it is ready for another hour's run. The coil should be cut down in power when reversed, as there is danger of disintegrating the platinum and depositing it on the glass. I cut out half the battery power. The tube makers recommend that very high vacuum tubes be sent them to have air admitted and repumped, but my method appears preferable, and, besides, saves their charge of three dollars and the time.

RALPH MCNEILL.

New York, August 19, 1896.

**Modern Practice in Interior Wiring.**

In the course of his paper on the "Evolution of Interior Conduits from the Electrical Standpoint," before the National Electric Light Association at New York, recently, Luther Stieringer made the following statement:

The best experience of the past fifteen years in interior wiring has demonstrated the following facts:

First—Indiscriminate wiring with staples is universally condemned.

Second—Cheat wiring is admissible in exposed work where the circumstances admit, but not in any concealed work.

Third—Wires embedded in plaster, depending on the insulation only for protection, are condemned.

Fourth—Lead covered wires are also condemned, except where protected in a conduit.

Fifth—Wires in mouldings do not afford mechanical or chemical protection, and are only admissible in surface work.

Sixth—Wires carried in plaster, and covered with split or zinc tubes to prevent injury by trowels, are condemned.

Seventh—Glass or porcelain insulators can only be utilized in special cases of exposed work.

Eighth—Paper tubes do not afford absolute mechanical and chemical protection.

Ninth—Insulated tubes covered with a thin coating of brass or other metals do not afford absolute mechanical and chemical protection, but, in exposed work, they are, to a certain extent, admissible.

Tenth—Woven fabric conduit does not afford absolute chemical and mechanical protection.

Eleventh—Heavy insulating covering, integral with the insulation, offers no absolute protection against mechanical and chemical injury, and is analogous to rubber tubing for gas distribution installed throughout a building.

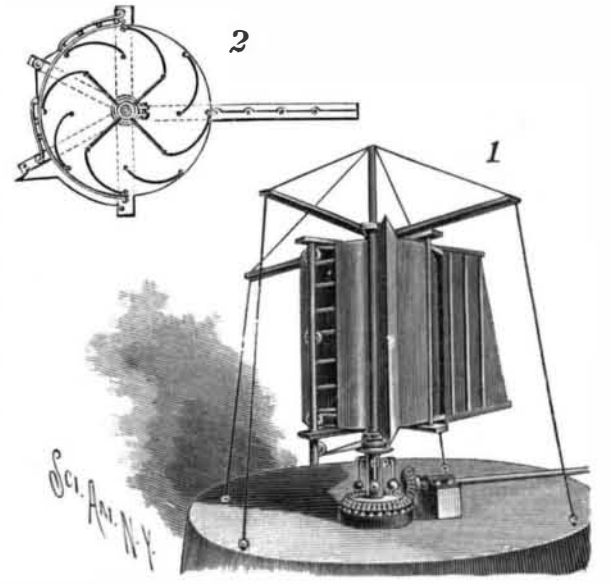
Twelfth—Concentric wiring is practiced in England with satisfactory results, but it is not in use in the United States. It offers many possibilities in the direction of a solid and fixed system.

Thirteenth—Paper lined iron or steel pipes, known as "iron armored conduit," "builders' tube," "armorite," "Clifton," and plain iron or steel pipe, are the only conduits that can afford absolute security against mechanical and chemical injury and assure permanence.

**A NEW SELF-REGULATING WIND WHEEL.**

The wind wheel shown in the illustration is designed to quickly adapt itself to the variations of force and direction of the wind, and maintain a practically even speed and power under great changes in wind velocity. It has been patented by John T. Shilling, of Fisher's, N. Y. Fig. 1 is a front view of the wheel, portions being broken away to show its construction, and Fig. 2 a horizontal section. The upper end of the central shaft is braced by guy lines and cross arms, and rotating on this shaft is a tubular shaft whose lower end rotates on ball bearings and has an annular beveled gear by means of which the power of the wheel may be utilized by means of another similar gear on a horizontal shaft. Upon the tubular shaft are upper and lower disks between which are held sails, blades, and supplemental blades, attached to vertical rods, and all of canvas or other flexible material. Rotating upon the tubular shaft, and having a bearing upon the central shaft, is an auxiliary frame carrying bars which extend beyond the circumference of the wheel, as shown in

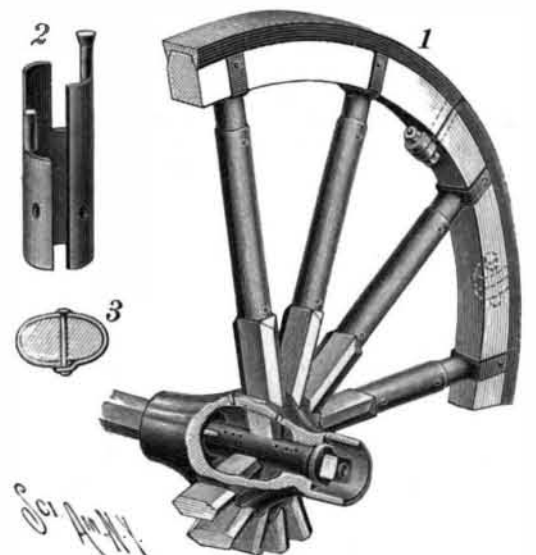
Fig. 2, and support a vane. On the opposite end of this frame, supported by stay rods and horizontally curved bars, are held damper curtains adapted to be automatically moved toward and from each other, to more or less restrict the opening for the passage of wind to the wheel. The rear edges of the curtains are attached to spring rollers and their adjacent free edges to ropes which extend over pulleys and down a hollow standard to connections with a drum below, mounted loosely on the tubular shaft. There are pivoted weighted arms on this drum, and, as they swing outward with the increased velocity of the wind, the drum is drawn into frictional contact with a collar, and is ro-

**SHILLING'S WIND WHEEL.**

tated to pull upon the ropes and draw the damper curtains toward each other, thus cutting off some of the wind from the wheel, the spring rollers separating the curtains more or less as the frictional contact of the drum with the collar is reduced, whereby the speed of the wind wheel will be kept practically uniform.

**AN IMPROVED VEHICLE WHEEL.**

The illustration represents an improved construction of the tire, hub, axle box and spokes of a vehicle wheel, by which it is designed that the tire may be tightened should the rim or felly shrink, and the spoke will be protected from injury by collisions, while the hub will be rendered stronger and more durable than usual, and a ready means is afforded for lubricating the axle spindle. The improvement has been patented by John S. Court, of Springdale, Tenn. Fig. 1 represents a portion of a wheel made according to this invention, a part of the hub being broken away, Fig. 2 showing a form of spoke sleeve especially designed for repairing, and Fig. 3 showing how the sleeve is attached to the spoke. The tire is flanged and beveled, and fits over a felly which is exteriorly beveled, corresponding to the inner bevel of the tire. The ends of the tire have inwardly extending lugs which abut and are fastened together by nuts and bolts, whereby the tire may be tightened should the felly shrink. The hub is of metal in one piece and at its central

**COURT'S VEHICLE WHEEL.**

portion is a series of tubular or hollow arms which form a central support for the axle box, there being perforations to admit oil to the axle spindle, and the chamber surrounding it containing cotton waste. The spokes are fastened in the tubular arms of the hub, and the outer end of each spoke is mortised in the felly, the outer end of the spoke being surrounded by a metal sleeve with ears to engage the front and back of the felly and the flange of the tire. A second sleeve also surrounds each spoke, being attached at one end to the outer end of the tubular hub arm from which the spoke extends and at the other end to the outer sleeve. A longitudinally split sleeve, as shown in Fig. 2, is used at the outer end of the spoke for repairing purposes.